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ABSTRACT

In a 1977 review of the literature on test answer changing, Mueller and Wasser (EJ 163 236) cited 17 studies and concluded that students changing answers on objective tests gain more points than they lost by so doing. Higher scoring students tend to gain more than do the lower scoring students. Six additional studies not reported in the Mueller and Wasser review have supported this conclusion; this paper reviews the findings from these additional studies. Research synthesized in both reviews surveyed these topics: (1) student opinion about the value of changing answers; (2) methods of measuring answer changes; (3) percent of students changing answers and percent of answers changed; (4) ratio of gains to losses; (5) relation of changes to achievement and aptitude; (6) number of changed answers; (7) sex differences; and (8) item characteristics. Although cognitive style was investigated and non-college subjects were used, studies in the present update continue to replicate previous research. Further research is recommended. (Author/CP)

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An Update of "Implications of Changing Answers on Objective Test Items"

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Running head: Update

Abstract

In a review of the literature on answer changing, Mueller and Wasser (1977) cited 17 studies which concluded that answer changing tended to improve students' test scores. Six additional studies, not reported in the Mueller and Wasser review, have corroborated this conclusion. A review of these additional studies is presented.

An Update of "Implications of Changing Answers on Objective Test Items"

Researchers have investigated the effect of answer changing on objective test scores for over 50 years. The primary focus of the research has been on whether changing answers increases or decreases total test score. In a review of the literature on answer changing, Mueller and Wasser (1977) cite 17 studies which conclude that answer changing tends to improve students' test scores. Six additional studies, not reported in the Mueller and Wasser review, have corroborated this conclusion (Crocker & Benson, 1977; Davis, 1975; Lynch & Smith, 1975; McMorris & Leonard, 1976; Pascale, 1974; Smith & Moore, 1976). This paper is a review of the findings from these additional studies and utilizes Mueller and Wasser's discussion format.

Students' Opinions about Changing Answers

Lynch and Smith (1975) in an informal "show of hands" survey of over 300 students in seven classes found that more than 75% of the students believed that changing answers would lower scores. Students' opinions were not surveyed in the other studies.

Assessment of Answer Changes

Special testing conditions were not present in most of the studies; that is, the tests were administered without special answer sheets or special instructions. Students completed the tests, and the researchers then examined the answer sheets for erasures or crossed out responses. There was one study that employed a special answer sheet and instructions. Lynch and Smith (1975) told the students the purpose of the study and then had them record their answers on a special answer sheet.

Percent of Changed Answers and Percent of Students Changing Answers

Lynch and Smith (1975) reported 72% of their students changed answers, while McMorris and Leonard (1976) cited 100%. The other studies did not report this information. In the one study reporting the percent of total answers changed, Pascale (1974) cited 7%.

Ratio of Gains to Losses

Of the six studies reviewed here, only Lynch and Smith (1975) employed some true-false items in their tests. Thus, a comparison of the ratio of gains to losses by item type is not meaningful. The ratio of gains to losses by changes ranged from 2.0/1 to 2.8/1 in studies disclosing this information (Davis, 1975; Lynch & Smith, 1975: Smith

& Moore, 1976). The ratio of students gaining to students losing points ranged from 6.0/1 to 39.0/1 for the various subgroups of students tested by Crocker and Benson (1977) and McMorris and Leonard (1976).

Achievement/Aptitude

Two studies investigated whether high scoring students who changed answers tended to gain more than low scoring students (Lynch & Smith, 1975; Pascale, 1974). The research by Pascale did not substantiate the hypothesis. Pascale also found that grade point average did not contribute significantly to the total variance of additional correct answers.

Number of Changed Answers

The number of answers changed and its relationship to gains resulting from answer changing was also studied (Lynch & Smith, 1975; Smith & Moore, 1976). In these studies, the greater number of changes were made by low scoring students, resulting in an inverse relationship. That is, the more answers low scoring students changed, the fewer gains were made. Both studies also found that high scoring students tended to make fewer answer changes.

Sex Differences

Pascale concluded that males obtained slightly higher scores than females when they changed answers, in the one

study examining sex differences in answer changing.

Item Characteristics

Lynch and Smith (1975) cited a low but significant correlation between item difficulty and the number of students who changed answers; that is, the more difficult the item was, the more students changed answers. In a more extensive study of item characteristics, Crocker and Benson (1977) found that the average percent of students correctly answering test items increased slightly (first vs. changed answers) for college and seventh grade students. For both groups, answer changing did not affect item discrimination statistics or test reliability.

New Areas of Investigation

Mueller and Wasser (1977) cited several gaps in the literature on answer changing. Three studies have begun to explore some of these areas. Under the rubric of cognitive style, McMorris and Leonard (1976) investigated the relationship of impulsivity, anxiety, preference for complexity, and field independence to answer changing. The results were not consistent over the four groups of students studied. For the combined groups, there were moderate positive relationships between impulsivity and the number of answers changed and between impulsivity and increments due to changes.

In all previous studies of answer changing, college students were used as subjects. Crocker and Benson's study (1977) included seventh grade students as well as college students. Smith and Moore (1976) investigated non-college young adults. These subjects, like college students, tended to improve their total test scores when they changed answers.

Discussion

The findings of the studies reviewed here continue to substantiate the following major findings of previous research on answer changing:

1. When students reconsider answers and then make changes, they tend to improve their total test scores.
2. High scoring students tend to gain more than low scoring students, although students at all score levels tend to gain.

Although cognitive style was investigated and non-college subjects were utilized, the studies in the present review generally continued to replicate previous research. Thus, answer changing remains a relatively unexplored topic. Further research will be required before more definitive statements can be made about answer changing.

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